

W5YI

America's Oldest Ham Radio Newsletter REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable.

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ARRL Petition: Eliminate Novice CW Bands, Expand Phone Segments

On March 22, 2002, the American Radio Relay League filed a massive *Petition for Rulemaking* with the FCC requesting that the Commission eliminate the 80, 40 and 15-meter Novice/Technician Plus CW subbands and redistribute ("refarm") those bands to the phone segments of the 80 and 40 meter bands.

The petition addresses the portion of the FCC's Amateur Service restructuring order which eliminated the granting of Novice Class licenses after April 15, 2000.

The League, as part of their comments on Amateur Service restructuring, had proposed a "refarming" of the 80, 40, 15 and 10 meter Novice CW bands to make more efficient use of those segments and the HF bands generally. The Commission chose not to go this route, instead electing to deal with license restructuring first, and postpone consideration of any revised operating privileges until a later date when some experience with the new license classes was obtained.

"It has now been approximately two years since the [restructuring] *Report and Order* was implemented," ARRL said and "...the 'Novice subbands' of the HF bands remain underutilized." The League recognized, however, that "significant num-

bers" of Novice and Technician-Plus licensees still operate in those segments and "They must not be 'disaccommodated' in any refarming plan."

"However, substantial advancements in the use of digital techniques in the HF bands, (such as the extremely popular PSK-31), and overcrowding generally (especially in the segments used for SSB telephony), firmly dictate that a refarming plan for the underutilized Novice HF subbands

cannot wait longer and must proceed now."

The proposed "refarming" was in line with the recommendations of the League's "Novice Spectrum Study Committee" and their report to the ARRL Board at their January 18-19, 2002 meeting held in Fort Worth, Texas.

ARRL Novice Spectrum Study Survey

The ARRL's Board of Directors in January of 2001 formed the five member committee to solicit membership input and updating of ARRL's position on refarming of the Novice HF subbands. A survey was developed of both ARRL members and non-members which listed some alternative configurations for the narrowband and wideband segments in the 80-meter, 40-meter, 15-meter and 10-meter HF allocations. For each band, one option was "no

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change." The ARRL received 4,744 responses of which nearly two-thirds (2,889 respondents) were Extra Class licensees.

Eighty meter band

The ARRL said in the petition that the "Novice Spectrum Study Committee" survey showed that more than 70 percent of those responding preferred an expansion of the 80-meter phone band (which currently begins at 3750 kHz) down to either 3700 or 3725 kHz, and that a 25 kHz exclusive segment for Amateur Extra class licensees be retained.

The initial ARRL proposal adopted by the Board would have added an additional 50 kHz segment to the General, Advanced and Extra Class phone bands. But, on motion of Rick Roderick, K5UR, the Delta Division Director (seconded by Wade Walstrom, WØEJ, Midwest Division Director) the Board unanimously agreed to amend parts of the original proposal. ARRL believes "...that of the two most popular configurations, the more cautious approach should be taken...." It proposed that the 80-meter phone band be reconfigured as follows:

80 Meters, Phone/Image/CW (Max. 1500wPEP)

| License Class | Current Band | Proposed | Additional |
|----------------|--------------|-----------|------------|
| General Class | 3850-4000 | 3800-4000 | +50 kHz |
| Advanced Class | 3775-4000 | 3750-4000 | +25 kHz |
| Extra Class | 3750-4000 | 3725-4000 | +25 kHz |

Forty meter band

Nearly half of the survey respondents (48.5 percent) supported a expansion of the 40-meter phone segment (currently beginning at 7150 kHz) down to the 7125 kHz level for both Extra and Advanced Class licensees, and 7175 for General Class licensees. The League said "Given (1) the severity of the interference from HF broadcasting stations to amateur telephony in the upper portions of this band, and (2) the substantial preference (approximately two to one) in favor of greater telephony band expansion...." it was proposing following change in the 40 meter phone band:

40 Meters, Phone/Image/CW (Max. 1500w PEP)

| License Class | Current Band | Proposed | Additional |
|----------------|--------------|-----------|------------|
| General Class | 7225-7300 | 7175-7300 | +50 kHz |
| Advanced Class | 7150-7300 | 7125-7300 | +25 kHz |
| Extra Class | 7150-7300 | 7125-7300 | +25 kHz |

Fifteen meter band

The ARRL Board initially voted to add 50 kHz more 15-meter phone spectrum to the General Class lineup and 25 kHz more for the Advanced and Extra Class. This was downgraded, however, to add 25 kHz more phone spectrum for the General, and no change for Advanced and Extra Class licensees. Follows is the breakdown of the

15-meter phone band as envisioned by the League:

15 Meters, Phone/Image/CW (Max. 1500w PEP)

| License Class | Current Band | Proposed | Additional |
|----------------|--------------|-------------|------------|
| General Class | 21300-21450 | 21275-21450 | +25 kHz |
| Advanced Class | 21225-21450 | 21225-21450 | No Change |
| Extra Class | 21200-21450 | 21200-21450 | No Change |

Ten meter band

More than half of the survey respondents (54.5 percent) proposed no change to the 10 meter telephony (wideband) segment. "The subbands in this band already substantially accommodate Novice and Technician-Plus licensees," ARRL noted. Therefore, no changes were recommended for General, Advanced and Extra Class licensees in the 10 meter band.

10 Meters, Phone/Image/CW/RTTY/Data (Max. 1500w)

| License Class | Current Band | Proposed | Additional |
|----------------|--------------|-----------|------------|
| General Class | 28300-29700 | No Change | No Change |
| Advanced Class | 28300-29700 | No Change | No Change |
| Extra Class | 28300-29700 | No Change | No Change |

Novice, Technician Plus licensees

Under the ARRL plan, current Novice, Technician Plus and Technician radioamateurs with Element 1 credit) licensees would be permitted to operate on the entire 80, 40, 15 and 10-meter General Class CW segments with a maximum 200 watt output. This includes:

Novice, Tech Plus and Technicians w/Code credit:

| License Class | Current Band | Proposed | Additional |
|----------------|--------------|-------------|------------|
| 80 meters, CW | 3675-3725 | 3525-3700 | +125 kHz |
| 40 meters, CW | 7100-7150 | 7025-7125 | + 50 kHz |
| 15 meters, CW | 21100-21200 | 21025-21175 | + 50 kHz |
| 10 m, CW/Data | 28100-28300 | 28000-28300 | +100 kHz |
| 10 m, Phone/CW | 28300-28500 | No change | No change |

Other operating rule changes requested

The HF Novice band "refarming" plan was not the only component of the petition. ARRL also included an assortment of other requests for rule changes. The ARRL's "omnibus" petition asked the FCC to:

- (1.) permit amateurs to use spread spectrum on the 222-225 MHz band. At present, Section 97.305(c) of the Rules prohibits SS emissions below 420 MHz (the lower limit of the 70 cm band). SS in the 222-225 MHz band would be on a secondary basis and must not cause harmful interference to stations employing other authorized emissions;
- (2.) expand the pool of special event call signs beyond the current 1x1 format to include identifiers for U.S. territories and possessions that do not provide for mailing addresses. These would include certain 2-by-1 call sign blocks such as KH5K;
- (3.) clarify its rules to indicate that modulated CW (MCW) is permitted for repeater station identification; and

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(4.) to incorporate into its rules a 1990 FCC waiver authorizing amateurs in certain areas of Colorado and Wyoming to operate on certain segments of the 33-cm band.

The League also invited the FCC to consolidate its omnibus petition in a "biennial review" type proceeding with other pending Amateur Radio-related petitions now before the FCC.

"Such a means of addressing Part 97 rule changes seems to ARRL to be efficient from the perspective of the Commission's resources, and provides a reasonably convenient timetable for evaluating the necessity of future Part 97 modifications," ARRL said.

GERMAN HAM SOCIETY: "RETAIN MORSE PROFICIENCY" GERMAN GOVERNMENT SAYS OTHERWISE

The Deutscher Amateur Radio Club (DARC), the German national amateur radio society recently canvassed their membership by mail concerning whether or not the Morse code examination requirements should be retained as part of the international Amateur Radio operator qualifications.

This is one of the questions that will be considered by the more than 150 nations that will be attending the next World Radio Conference to be held in June 2003 in Caracas, Venezuela.

The DARC received responses from 17,455 DARC members - about a third of all their members and 20 percent of Germany's 80,000 licensed radioamateurs. Of the 16311 valid votes (1144 were invalid), 8530 (or 52.3 %) voted to keep the CW test in its current form ...47.7 % voted for abolishment. Interestingly, two-thirds of the DARC membership did not express an opinion at all.

In any event, due to the 2 percent "majority" the DARC Board took the formal position that the Morse proficiency requirement should be the German position at the upcoming WRC-2003. (See: < www.darc.de >).

The position of the DARC Board is that "Morse Telegraphy is an important means for communication . Hence it can be argued that Morse telegraphy has intrinsic value for Amateur Radio, and is therefore worth keeping and promoting as a requirement. This position will be maintained regardless of whether or not Morse telegraphy remains as an examination element or not."

But it is the voting by the German delegation to WRC-2003 that counts. On March 18th, a meeting of the German WRC-2003 National Preparatory Group was held in Bonn at the Federal Ministry of Economics.

According to Dr. Ralph P. Schorn, DC5JQ, the National Group preparing Germany's WRC-2003 position discussed the expected changes to international Radio Regulation S25.5 which mandates demonstrated Morse proficiency as a prerequisite for HF operation.

The advisory group's members at their September

2001 meeting had already decided to advise the Minister to vote against compulsory Morse telegraphy exams.

The National Advisory Group took note of the DARC opinion poll that showed 52 percent voted in favor of keeping compulsory Morse exams for shortwave access.

The Group, however, expressed no necessity to change their September 2001 position since they had already assumed a 50:50 opinion among German radio amateurs. The National Advisory Group regarded the outcome of the survey as a confirmation of their September decision against CW exams.

The National Group supported the position of CEPT's Conference Preparatory Group (CPG) that, at its Oslo meeting in February 2002, decided on new text for Article S25.5 to be the European position. It reads:

"Administrations shall determine whether or not a person seeking a license to operate an amateur station shall prove that he is able to send and receive correctly texts in Morse code signals."

Only a single member of the National Advisory Group (the DARC) voted against that position. Accordingly, the advisory group agreed that the decision to retain a Morse exam should be up to each individual country.

Representatives of the [German] Federal Ministry of Economics pointed out that Germany would not continue Morse telegraphy exams if not required and, in any event, Germany will not adopt any national regulation that deviates from a common European CEPT position.

VANITY CALL SIGNS BEING ISSUED, BUT SLOWLY

Vanity call signs have now been granted to applicants who applied for them up through January 24, 2002. According to an ARRL bulletin, the FCC is plugging away at the vanity call sign application backlog. But it is going slow since the FCC does not want to have to recall vanity call signs that are improperly assigned.

Although more than 1,100 vanity call signs were issued during March 2002, there is still a huge backlog. The FCC has been attempting to clear the remainder of the accumulation of vanity applications that at one point dated back to October's anthrax mail moratorium.

The FCC said last week that it's finally starting to receive the two weeks' worth of October paper vanity applications that had been missing. It was those paper-filed applications that held up vanity call sign processing. The applications had been sent from Gettysburg to Washington, DC, last fall for anthrax decontamination.

Although the majority of vanity applications are filed electronically, the FCC's policy is to give equal processing weight to paper and electronic applications, so the whole system ground to a halt while the missing applications were located. The FCC asked that vanity call sign applicants be patient and to refrain from repeated inquiries.

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CUTTING EDGE TECHNOLOGY

Kevin Warwick, a British university scientist, has implanted one hundred small sensors in the main nerve of his left arm. The sensors are linked to a radio transceiver so that data could be sent from the sensors to a computer.

His goal is to determine if by retransmitting the data back into his nervous system, he can obtain a similar movement in his arm. For example, data is generated when a finger is moved. He hopes to be able to activate the finger by remote control. So far, all he has obtained is a "tingling sensation."

Warwick believes his radio/computer link research might lead to a way to give people with spinal cord injuries some ability to move by remote control.

EMERGING COMMUNICATIONS

In 1996 the U.S. Government and the electronics industry concluded that the nation's 50-year-old analog television system should be replaced by digital technology. Senator John McCain (R-AZ), the ranking Republican of the Committee on Commerce, Science, and Transportation is not happy with the progress being made toward the conversion.

"In 1997," he said "the National Association of Broadcasters asked Congress to support the transition to digital television, specifically high-definition digital television, because of its potential to give Americans sharp movie-quality pictures and CD-quality sound."

Digital TV sets are able to display high-definition pictures with 720 or 1080 scanning lines, compared to about 480 visible lines in the old NTSC analog standard, plus up to six channels of Dolby sound. And the screen's width-to-height (aspect ratio) is nearly twice as wide.

"[Congress] took the extraordinary step of giving the broadcast industry a huge amount of spectrum for free - a \$70 billion dollar gift," McCain said. "At the same time, Congress also decided that broadcasters could keep their old analog spectrum until 2006, or until 85% of TV homes in a market could receive digital signals."

"It has been almost 5 years since the spectrum giveaway and the transition to

digital television has barely materialized."

He said it was clear that by 2006, the U.S. "...will not have the transmission facilities, the digital content, nor the reception equipment necessary to ensure that 85% of the population will be able to receive digital television. ...Congress must hold broadcasters' feet to the fire to force them to roll out digital television."

McCain said that according to the CEA (Consumer Electronics Association) very few digital television sets are being sold compared to analog sets and that "...the NAB is now saying that the transition could take as long as possibly 2015."

A provision in the Bush Administration's 2003 budget requires broadcasters beginning in 2007 to be assessed a \$500 million annual lease fee for their use of the analog spectrum. If they return their analog spectrum by the 2006 deadline for auctioning, they will be exempt from the fee.

By the way, there is an excellent explanation of how DTV (digital television) works on the web at: <www.howstuffworks.com/dtv.htm>. Check it out.

COMPUTERS & SOFTWARE

Anti-virus company, McAfee.com, has issued a warning of an e-mail virus (called the "Bill Clinton worm") that has the capability to erase files on your computer's hard drive. The subject line reads 'bill caricature' and the attachment file <cari.scr> displays a humorous cartoon of former president Bill Clinton playing a saxophone with a women's bra emerging from the horn.

The body of the e-mail attempts to mislead users into thinking the message has been virus scanned by containing the line: "No virus (sic) found" followed by "McAfee.com." If the attachment is opened, the worm copies itself to the computer's system folder and spreads via Outlook e-mail, sending itself to every address in the recipient's address book, McAfee.com said in an alert.

If the infected computer is rebooted between the hours of 8 a.m. and 9 a.m. all files on the C, D, E and F drives will be deleted. The worm is also known as W32/MyLife.b@MM, W32/Caric@mm and Win32/Cari.Worm. The virus, which may have originated in Asia, has hit Great Britain and Australia particularly hard.

China will surpass Japan next year as the world's second biggest PC market with projected sales of 13 million units, according to International Data Corp. The leading personal computer manufacturer in China is Legend Holdings, a government-nurtured start-up that has grown to become China's most successful computer maker. Legend boasts a 31 percent market share.

Legend began building PCs in 1984 in Beijing and is now Asia's number one maker with some \$3 billion in revenue. Legend's headquarters are in Hong Kong and has branch offices all over the world. Among its most novel computer is the Tianhui Children's PC which comes loaded with all sorts of multi-media educational software. The U.S. has nothing like it.

But Dell is making inroads and now accounts for 5 percent of all PCs sold in China and is the only outsider gaining market share. To defend its market share, Legend Computer is increasing its made-to-order operation where Dell is the acknowledged world-wide leader. Since most Chinese consumers don't have credit cards, Dell has set up payment arrangements with banks in China, and lets buyers pay on delivery

Legend Holdings also has a \$200 million joint venture with AOL Time Warner, Inc., to provide Internet content and technical support. AOL is slowly introducing its features to Legend's <www.FM365.com> portal and is focusing on e-commerce.

The partners plan to offer 12 months of free Internet service with every computer sold before moving to a monthly subscription model ...quite different from the "pay-per-minute" Internet access system currently used by the Chinese.

Yet to be answered is how AOL will deal with the flow of information in a country where content is tightly controlled. China's leaders understand the gains inherent in the wired economy. But along with riches come ideas, so China has been especially diligent in its efforts to mute online political discussions. Beijing routinely blocks websites that interfere with public security, rights and "interests" ...or creates disorder.

Since China first allowed commercial Internet accounts in the mid-1990s, the government has produced a steady stream of regulations aimed at controlling content. Enforcement of the information rules are largely the responsibility of cyber-

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café owners, ISPs and content providers.

Beijing is especially intensifying its campaign against cybercafés which play an important role in developing countries, where most citizens do not have access to the Internet at home or work. Pyramid Research, an international technology research firm, gives an estimate of 75,000 Internet cafés in China.

The government recently closed down almost 2,000 cafés in the past few weeks for failure to monitor the web sites visited by their clientele. Another 6,000 were ordered to suspend operation and to make changes to their businesses. Many were cited for not having licenses ...or for allowing access to unauthorized information.

Legend reportedly will use AOL's filtering software, used in the U.S. by parents to keep kids from accessing porn sites, to filter out unwanted content.

Legend owns 51 percent of the partnership since China bans foreign ownership of content providers. China is potentially the world's largest Internet market. See: <www.legend-holdings.com>.

On March 20th, Apple Computer unveiled their new "Apple Cinema HD 23-inch High-Definition Display." The 23-inch flat panel (less than 2-inches thick) liquid crystal HD digital monitor has 1920x1200 HD resolution. The new \$3499 display monitor enables creative and technical professionals using Apple's Final Cut Pro video editing software to author HDTV content in its native resolution.

GADGETS & GIZMOS

Japanese electronics maker Matsushita Electric Co (Panasonic) has a new monitoring (surveillance) camera that can be controlled through the Internet using mobile phones or desktop computers. It can move sideways, tilt up and down and send still images to mobile phone screens. Users can directly access their cameras through a Web site at a subscription cost of \$23 a month. The price is not cheap ...more than \$5 thousand.

The biggest advance in video in recent years is the personal video recorder (or PVR as it is known.) Both the TiVo and ReplayTV digital video recorders allow you to record programs from your TV directly to a hard disk. They use MPEG2 technology to compress

the data, the same technique used in Digital Video Discs (DVDs).

These recorders find and record the shows you're interested in so you can watch them whenever you want. You can also pause, rewind, and instantaneously replay brief segments of live broadcast TV. Unlike VCRs, PVRs don't require tapes. TiVo and ReplayTV both interface with a standard phone line in order to download TV programming information.

The ReplayTV brand is made by Sonicblue, based in Santa Clara, Calif. A new feature in the ReplayTV 4000 line allows users to automatically skip over commercials without fast forwarding. TiVo, the market leader, is headquartered in Alviso, Calif. Prices for PVRs start at about \$500.

Both devices have broadband capability, allowing consumers to send video over the Internet to other PVRs. Content providers – such as movie studios and TV broadcasters – are not worried about personal use copying, but they are intensely concerned that copyrighted digital copies of video programming (especially movies) can be retransmitted to others without authorization.

Remedies being considered are requiring ISPs (Internet Service Providers such as AOL) to install the necessary hardware/software to block the transmission of any audio/video product that the content providers flag as copy-protected. Alternatively, Congress could mandate the inclusion of copy-protection circuits in all digital hardware products.

Microsoft also has an entry into the PVR business called UltimateTV.

INTERNET & WORLD WIDE WEB

Want to start your own personal Internet radio broadcast station (both voice and music) with a global audience, 24 hours a day?

"Live365" can set you up with a studio for a one time fee of \$14.95 plus \$6.95 to \$14.95 a month depending on features (including your own personal Internet address.) All you need is a computer, an Internet connection, a soundcard and a microphone. The broadcast studio software is downloaded free from: <www.live365.com>. You may not sell advertising and certain content rules apply. There are no music licensing fees since all music royalties are paid by the service pro-

vider under a blanket agreement negotiated with ASCAP.

WASHINGTON WHISPERS

Weird Protest at the Commission -- 'Angels of Public Interest' descend on FCC "...to restore democratic values in the media and communications industry."

On March 22, the Federal Communications Commission's Washington headquarters – usually a target of square-jawed industry lobbyists – attracted protesters garbed in wings and halos. Costumed media activists from around the nation performed political theater to lambast the growing trend of media consolidation – and to vent their outrage at recent comments by FCC chairman Michael Powell.

From the beginning of his administration, Powell has criticized the traditional FCC watchwords of the "public interest, convenience and necessity" as too vague to guide the Commission in its deliberations. Powell remarked in a 1998 speech that he needed a crystal ball to divine the public interest, while he waited for an "angel of the public interest" that never showed up. (The chairman also reportedly said, "The marketplace is my religion," a comment he recently told a Senate panel he doesn't remember making.)

Protesters used the chairman's religious references to absurd effect. An "angelic" choir, led by a Billy Graham look-alike, sang satiric hymns on loudspeakers. Dozens of FCC employees left their posts to gawk through lobby windows, hearing chants like: "Angels we are here today, to deliver a crystal ball. Michael Powell we're here to say, Don't make our airwaves a shopping mall!" ('Angels We Have Heard on High' provided the melody.)

Organizations represented included MediaChannel, Prometheus Radio Project, Digitaldisaster.org, Democraticmedia.org, Media Tank, Alliance for Community Media, Fairness and Accuracy in Reporting (FAIR), and the National Organization for Women. Prometheus Radio's Pete Tridish, a former radio pirate who now consults with licensed stations, pointed to Powell's statements suggesting that citizens should communicate their wishes only to Congress, and leave the FCC to work exclusively with industry.

Relaxed media cross-ownership rules, the activists maintain, are concentrating information power in the hands of a few.

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According to Media Tank, "A single transnational corporation - with absolutely no allegiance to your own community, only to its stockholders and advertisers - could own and control the daily and weekly newspapers you read, in addition to the television stations you watch, the radio stations you listen to, the movie theaters and video stores you frequent, the magazines you peruse, the music labels you buy, the internet service provider you use and even the sports teams you root for."

The protesters attempted to gain entrance to the FCC building to present Powell with a mock 'crystal ball of the public interest.' But members of the FCC's security force evidenced no interest in the protesters' message, announcing that the Commission's headquarters -- a public building -- is "private property".

The protesters later issued a press release charging that "Chairman Powell and Congress have shown again and again that they're in bed with big business."

See "Angels of Public Interest" website: <www.americanresurrection.com>.

The Federal Trade Commission warns that e-mail requests that appear to be from your Internet Service Provider (ISP) stating that your "account information needs to be updated" or that "the credit card you signed up with is invalid or expired and the information needs to be reentered to keep your account active," may be a scam. Do not respond without checking with your ISP first.

There are very few politicians in Washington that haven't been on the receiving end of campaign donations from Enron or its equally troubled auditor, Arthur Andersen.

The Center for Responsive Politics is a non-partisan, non-profit research group based in Washington, D.C. that tracks money in politics, and its effect on elections and public policy.

Their award-winning <www.opensecrets.org> website tells you who gave how much ...and to whom! You can even enter your zip code and find out who contributed money from your own neighborhood.

Support for the Center comes from a combination of foundation grants and individual contributions. They accept no funding from businesses or labor unions.

The FCC's Consumer Information

Bureau (CIB) keeps track of all complaints received from the public. And what is the public complaining about to the FCC? Primarily telephone service!

Telephone billing and rate complaints, "slamming," (the unauthorized switching of long distance service) and "Telephone Consumer Protection Act" violations (unsolicited telemarketing calls and faxes) accounted for 70 percent of the nearly 7,200 complaints received by the FCC in the 4th quarter of 2001.

But overall there was a 38 percent reduction in the total number of consumer complaints ...largely explained by the disruption of postal mail following the October anthrax incidents.

A British company has been fined more than \$1 million by the FCC for conducting massive fax spam campaigns. Effective Dec. 20, 1992, FCC rules banned the transmission of unsolicited fax advertisements. 21st Century Fax encouraged people to call 900 numbers (at \$2.95 per minute) to register their views on a variety of questions (such as the "National Gun Control Poll" which asks: "Would you like to see more effective gun control laws?") or to receive "Yummy yum-yum" and cabbage soup diet recipes. The estimated time to retrieve a report is 6 or 7 minutes.

One of the junk faxes went to a Virginia congressman who knew that the Telephone Consumer Protection Act prohibits faxing unsolicited ads. 21st Century Fax had previously been sent an FCC citation two years ago.

The company denied liability on the basis that the faxes originated from overseas. The FCC disagreed saying that the law applied to 21st Century Fax because it had a presence within the United States. (It listed a New York address on its faxes.) The firm's website is still operational at: <www.pollresults.co.uk>.

The FCC has asked for \$278 million to fund Fiscal Year 2003 and a staffing level of 1,975 full-time people. This budget represents an increase of \$33 million over the FY 2002 appropriation level of \$245 million. Nearly 25% of the requested increase is to cover mandatory increases for salaries and benefits ...and to fund contract services. \$15 million will be used to continue expansion of electronic filing, improve expertise of the staff, replace monitoring and testing equipment, improve the FCC's laboratory and to improve homeland security.

AMATEUR RADIO NEWS

Great Britain's Regulatory Agency has outlined their future plans to restructure their Amateur Service.

Their new Foundation License (which basically requires no Morse code proficiency for HF operation) "...has been a success; with over 1500 Foundation (M3) licenses being issued."

A new Intermediate license will be introduced early in 2003. Once the new license is in force, a pass at the Foundation level will be a pre-requisite to sitting for the Intermediate examination.

A new Full license is planned for early in 2004. From that date, entry into UK Amateur Radio will be exclusively via the Foundation license.

At present, the United Kingdom has three license classes: Class "B" VHF/UHF license, Class "A/B" allows all HF bands at reduced power (5 wpm code), and the Class "A" - Full license (12 wpm code.)

The agency said "It is still expected that the World Radio Conference in 2003 will remove the obligation on administrations to conduct Morse tests for access to the HF bands."

Once this is in force, "...it is the UK's intention, supported by the RSGB, to merge the current 'A' (Full license) and 'B' class (no code) licenses, granting current 'A (Full)' license privileges to all. The three types of license will then simply be: Foundation, Intermediate and Full."

The FCC has added a neat, new Enhanced License Search tool to their Universal License System (ULS) website. You can find it at <wireless.fcc.gov/uls>. (Clicking on the "License Search (Enhanced)" link.)

Phase one of the License Search redesign effort enables you to search for a wide range of licenses and information contained in the Universal Licensing System including Amateur, Aircraft, Commercial/Restricted, GMRS and Ship licenses.

The remaining radio services will become available in the redesigned License Search later this year. The FCC said they would retain the current License Search until all services are available through the redesigned interface.

The License Search provides access to license information using both Basic and Advanced searching. The new search

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capability is a direct result of several conference calls and testing involving the FCC and various VECs last year.

The new layout and functionality of ULS License Search (Enhanced) allows searchers faster, easier navigation of displayed licensing information, printable page formatting, and a host of other new features which improve performance and enhance access to the FCC's license database.

FCC said the redesign process was driven by the needs of ULS customers – drawing on feedback from focus groups, letters, calls, and e-mails. "Attractive new graphics and better placement of search elements make finding and entering search criteria easier."

The Advanced Search function is particularly good. For example, you can get a list of all Vanity call signs issued on a particular day (or a range of days) sorted by applicant name or call sign. Try it out (...and add it to your list of bookmarks!)

Partial list, new ULS License Search features:

- ▶ **Speed and Compatibility** - The older technology used to query the license database has been replaced with HTML forms and Java Server Pages. This change in technology dramatically increases the speed License Search results pages load.

- ▶ **Direct Access to Information** - License detail screens have also been designed with accessibility in mind.

- ▶ **New Basic and Advanced License Search Pages** - The search fields most often used are selected on the Basic Search page, eliminating the need to read through the entire list of ULS search fields. A more detailed set of search criteria are found using "Advanced Search."

- ▶ **Service Specific Searches** - Each screen features search fields appropriate to that service.

- ▶ **No longer a limit to the number of records** returned by License Search. Previously this record was set at 3,000.

- ▶ **Convenient hyperlinks** connect you to related information. For example, click on the file number listed under Applications to be taken directly to the application(s) associated with the license.

- ▶ **New "Printable Page" button** appears at the top of every search results and detail screen, allowing you to print the contents of the page pre-formatted for most common printers..

New Features for Searching Amateur Licenses

- ▶ Search for licenses in a specified operator class.

- ▶ Limit your search to Amateur and Vanity licenses (radio service codes HA and HV) without having to scroll through a long list of radio service codes.

- ▶ Search for Individual, Club, RACES, or Military licenses.

- ▶ Search by Trustee Name, VEC code.

Search Features: Commercial Radio Licenses

- ▶ Search by COLEM, Operator Class.

- ▶ Search includes only Commercial/Restricted licenses.

FCC Amateur Radio Enforcement

Edwin O. Martinez, KE4VDT (listed as Cumming, GA in FCC database, but possibly now residing in Hayward, CA) has been warned about his failure to identify his station when operating on Amateur repeaters in the Hayward, California area. He is to contact the FCC.

Daniel J. Gillam, N0WNC (Potosi, MO) has been warned about his language on the two meter airwaves.

The FCC rules prohibit Amateur stations from transmitting obscene or indecent words or language and that "...for indecency purposes, the Commission treats Amateur transmissions the same as commercial broadcasts." Obscene, indecent or profane language by means of radio communications are grounds for license revocation, FCC said.

"Obscene speech is not protected by the First Amendment and cannot be broadcast at any time. To be obscene, material must meet a three point test: (1) an average person, applying contemporary community standards, must find that the material, as a whole, appeals to the prurient interest; (2) the material must depict or describe, in a patently offensive way, sexual conduct specifically defined by applicable law; and (3) the material, taken as a whole, must lack serious literary, artistic, political or scientific value"

"The Commission defines indecency as language or material that, in context, depicts or describes, in terms patently offensive as measured by contemporary community standards, sexual or excretory activities or organs."

The FCC said Gillam's operation "...is contrary to the basis and purpose of the Amateur Radio Service [and] degrades the Amateur spectrum for legitimate users." He was ordered to respond to the FCC about his station operation within 20 days.

The FCC also reminded Gillam that repeater control operators are responsible for the proper operation of a repeater and

it requires them to take reasonable steps to ensure that repeater operation complies with the rules. "You will be expected to comply with any requests from the repeater licensee or control operator to refrain from use of the repeater."

Melvin E. Langston, KD6DHI (Sun Valley, CA) has been directed by the FCC to respond to complaints about his deliberate interference to the W6NUT (LaMirada, CA) repeater system by retransmitting output signals back into the input of the repeater on 147.435 MHz. "On March 10, 2002, these signals were tracked to an antenna at your residence."

Christian Moszyk, KG2BU (Flushing, NY) is to respond to numerous complaints alleging that he interfered with ongoing communications on the 20-Meter Amateur in February of this year.

James D. Stone, N5AHP (Morrilton, AR) is alleged to have deliberately interfered with the AC5RU repeater during a net operation. The KD5CYA and AC5RU repeaters are embroiled in an interference dispute which the FCC says both parties are responsible to solve. The FCC warned Stone that further interference instances "will lead to enforcement action against your license." He is to respond to the complaint in writing within 20 days.

Glen A. Summers, KB6VBL (also of Morrilton, AR) was sent a similar letter by the FCC also alleging interference to the AC5RU repeater on March 12, 2002. The routine renewal of Summer's license is being held up until the matter is resolved. He too is to respond to the interference complaint.

Kenneth P. Thomason, AD5BT (Wynnewood, OK) is, according to the Mid-America Coordination Council, operating an uncoordinated repeater on 147.300 MHz which is causing interference to KP2CP, a coordinated repeater, operated on 147.315 MHz by the L & M radio Club in Newcastle, Oklahoma. "Evidence also indicates that the transmitter is over-modulated and is splattering on 147.315." The FCC has requested information concerning the operation and coordination of the AD5BT repeater and any complaints they may have received.

"...the licensee of the uncoordinated repeater has primary responsibility to resolve the interference," FCC said. A response must be provided within 20 days.

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STUDENTS AROUND THE WORLD TALK TO ASTRONAUTS

With the help of Amateur Radio clubs and operators, students from all over the world have been contacting the orbiting space station. The SAREX program (the Space Amateur Radio Experiment) is now called ARISS, Amateur Radio on the International Space Station.

International Space Station Commander Yuri Onufrienko, RK3DUO recently chatted with students at Kursk Technical University about 250 miles south of Moscow. Yuri used the Russian callsign, RS0ISS, while students used their club station call sign, RW3WWW.

On March 14th, students at the Peter Anich High School in Bolzano, Northern Italy, contacted astronaut Dan Bursch, KD5PNU, on the Space Station. Bursch used the NA1SS callsign, the students: IN3JHZ. It was the 50th in a series of scheduled ARISS contacts since the first ISS crew came aboard in Nov. of 2000. The QSO lasted about ten minutes and the questions were varied.

Peter wanted to know which of their experiments was the most interesting. Dan said they were working on learning how their nerves control their muscles. "We try to see if there is anything we can do to combat the effect of zero gravity other than working out in space or exercising."

Barbara asked how the astronauts produce oxygen. Dan said "We use electrolysis. We also have oxygen tanks on board but in the Russian sector we have an electrolytic machine. It turns water into hydrogen and oxygen, we set the hydrogen over board and we use the oxygen on board."

Erwin and Andrea wanted to know about electrical power consumption. "We use about 16 kW on average." Dan said. "Our solar arrays produce much more than that but there are inefficiencies and moreover the batteries have a certain limit on how much they can take. About 3 kW are used for heaters, mainly for heating the shell of our modules because we want to prevent condensation on the inside of the space station." Dan said the solar panels produce about 30 kW. "On the Russian side they use 28 Volts for the spacecraft, which is kind of a standard for a spacecraft and airplanes and on the U.S. side we use 120 Volts."

Marc asked about the temperatures. Dan said the temperature inside the station is kept about 26 degrees centigrade. "...on the outside the temperatures we see vary widely from plus to minus 250 degrees Fahrenheit."

Patrick asked about their food. "We eat 3 meals a day. Drinks, we have pretty much like anything you can get on earth: coffee, tea, juice, fruit drinks, breakfast drinks. We have a combination of U.S. and Russian food."

Evelyn wanted to know how close the spacecraft got to the earth. "Our orbit is about 200 nautical miles. Right now it is 217 nautical miles and it seems we need a burn

at least every 3 weeks or so.

Alexander asked about weightlessness. "...short term, you get sick to your stomach or you get a headache. On the long term we have a definite bone loss like older people do and muscles suffer lack of use."

Juergen asked about their free time? "We listen to music, we watch movies, we also have e-mails. Carl Walz brought an electronic keyboard and has a guitar."

Hannes wanted to know about the feeling of time. "We count the weeks instead of the days."

Barbara asked about bathing. "We use wet towels to kind of wipe ourselves off and then we use dried towels to get dried off. We don't have a real shower."

Erwin wanted to know about sleeping. "We go to sleep at 21:30 GMT or universal time, that's the same as 9:30 PM and we wake up at 06:00, 6 AM."

Andrea asked about noise inside the station? "...it is fairly noisy here," Dan said. "But in some places it is quieter. Outside, of course, it is basically noiseless, but when somebody is working outside, I can hear the banging outside the station."

Marc asked how the astronauts got along. "The relationship between astronauts sometimes is like any other crew on an airplane, sometimes it's like roommates. We live very closely together for a long time."

David wanted to know about the best landscapes outside the space station. Dan said that coral reefs were particularly beautiful "...so red," he said.

Patrick asked about putting on their astronaut suit? "The astronaut suit for a space walk takes about 30 minutes for a Russian suit, about an hour for a U.S. suit."

Evelyn wanted to know how the astronauts got rid of waste, but contact between the Italian school and the space station was lost before it could be answered.

ARISS is an international project with U.S. participation from AMSAT, the ARRL and NASA.

AMATEUR STATION CALL SIGNS as of April 1, 2002:

| District | Extra | Advanced | Tech./General/Novice | |
|-------------|--------|----------|----------------------|--------|
| 0 | AB0UK | KI0SF | ----> | KC0MTP |
| 1 | AA1ZZ | KE1MD | ----> | KB1IBA |
| 2 | AB2RE | KG2RO | ----> | KC2JIT |
| 3 | AA3YT | KF3EC | ----> | KB3HVC |
| 4 | AG4QH | KV4GG | ----> | KG4SJ |
| 5 | AD5IJ | KM5XO | ----> | KD5RWR |
| 6 | AE6CX | KR6EZ | ----> | KG6KSG |
| 7 | AC7SD | KK7XF | ----> | KD7QMD |
| 8 | AB8MN | KI8KD | ----> | KC8TLO |
| 9 | AB9EK | KG9RA | ----> | KC9BJX |
| Hawaii | -----> | AH6RF | KH7ZZ | WH6DGR |
| Alaska | -----> | AL7RR | KL1HX | WL7CVO |
| Virgin Isl. | -----> | KP2CS | NP2LW | WP2AIN |
| Puerto Rico | WP3T | KP3BN | WP3QD | WP4NOZ |

[Source: FCC Amateur Service Database, Washington, DC]

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AMATEUR RADIO SERVICE CENSUS - INDIVIDUAL STATIONS MARCH 31, 2002 Vs. 2001, 2000

| State | Extra | Advanced | General | Tech + | Technic. | Novice | March 2002 | March 2001 | March 2000 | % Inc. |
|----------------------|--------|----------|---------|---------|----------|--------|------------|------------|------------|--------|
| AK Alaska | 450 | 382 | 646 | 347 | 1,277 | 140 | 3,242 | 3,212 | 3,170 | 2.3% |
| AL Alabama | 1,596 | 1,289 | 2,068 | 1,180 | 3,980 | 379 | 10,492 | 10,580 | 10,413 | 0.8% |
| AR Arkansas | 1,037 | 816 | 1,268 | 777 | 2,858 | 276 | 7,032 | 6,994 | 6,787 | 3.6% |
| AZ Arizona | 2,267 | 2,074 | 3,043 | 1,838 | 5,855 | 586 | 15,663 | 15,731 | 15,310 | 2.3% |
| CA California | 11,417 | 11,374 | 16,958 | 12,679 | 41,905 | 6,459 | 100,792 | 102,722 | 103,046 | -2.2% |
| CO Colorado | 1,880 | 1,618 | 2,425 | 1,489 | 4,271 | 529 | 12,212 | 12,249 | 11,983 | 1.9% |
| CT Connecticut | 1,339 | 1,112 | 1,892 | 1,042 | 2,137 | 683 | 8,205 | 8,319 | 8,318 | -1.4% |
| DC Dist. of Columbia | 72 | 74 | 102 | 40 | 94 | 28 | 410 | 418 | 410 | 0.0% |
| DE Delaware | 240 | 178 | 330 | 186 | 372 | 74 | 1,380 | 1,388 | 1,390 | -0.7% |
| FL Florida | 5,796 | 6,220 | 9,831 | 4,835 | 10,285 | 2,768 | 39,735 | 39,994 | 39,813 | -0.2% |
| GA Georgia | 2,183 | 2,022 | 3,013 | 1,839 | 4,951 | 631 | 14,639 | 14,578 | 14,429 | 1.5% |
| HI Hawaii | 499 | 381 | 575 | 431 | 1,209 | 190 | 3,285 | 3,302 | 3,172 | 3.6% |
| IA Iowa | 1,006 | 1,061 | 1,507 | 705 | 1,796 | 386 | 6,461 | 6,525 | 6,425 | 0.6% |
| ID Idaho | 589 | 438 | 846 | 528 | 1,888 | 146 | 4,435 | 4,392 | 4,286 | 3.5% |
| IL Illinois | 3,422 | 2,969 | 5,003 | 2,796 | 7,004 | 1,510 | 22,704 | 22,794 | 22,649 | 0.2% |
| IN Indiana | 2,044 | 1,822 | 3,187 | 1,978 | 5,103 | 871 | 15,005 | 14,958 | 14,758 | 1.7% |
| KS Kansas | 977 | 841 | 1,607 | 885 | 2,471 | 461 | 7,242 | 7,294 | 7,226 | 0.2% |
| KY Kentucky | 1,254 | 949 | 1,694 | 1,101 | 3,357 | 519 | 8,874 | 8,866 | 8,783 | 1.0% |
| LA Louisiana | 1,030 | 1,008 | 1,392 | 796 | 2,118 | 342 | 6,686 | 6,797 | 6,834 | -2.2% |
| MA Massachusetts | 2,476 | 1,957 | 3,196 | 1,922 | 3,799 | 995 | 14,345 | 14,484 | 14,434 | -0.6% |
| MD Maryland | 1,940 | 1,618 | 2,327 | 1,398 | 3,102 | 668 | 11,053 | 11,187 | 11,147 | -0.8% |
| ME Maine | 687 | 538 | 1,043 | 528 | 1,360 | 249 | 4,405 | 4,427 | 4,360 | 1.0% |
| MI Michigan | 3,153 | 2,631 | 4,583 | 2,596 | 7,111 | 1,123 | 21,197 | 21,233 | 20,783 | 2.0% |
| MN Minnesota | 1,679 | 1,466 | 2,425 | 1,242 | 3,385 | 550 | 10,747 | 10,750 | 10,593 | 1.5% |
| MO Missouri | 1,931 | 1,654 | 2,747 | 1,452 | 4,297 | 657 | 12,738 | 12,785 | 12,585 | 1.2% |
| MS Mississippi | 697 | 643 | 952 | 494 | 1,650 | 200 | 4,636 | 4,717 | 4,653 | -0.4% |
| MT Montana | 454 | 357 | 647 | 319 | 1,140 | 158 | 3,075 | 3,101 | 3,061 | 0.5% |
| NC North Carolina | 2,803 | 2,351 | 3,700 | 2,252 | 6,424 | 1,107 | 18,637 | 18,604 | 18,214 | 2.3% |
| ND North Dakota | 214 | 167 | 368 | 212 | 520 | 78 | 1,559 | 1,567 | 1,567 | -0.5% |
| NE Nebraska | 554 | 552 | 996 | 475 | 1,119 | 206 | 3,902 | 3,901 | 3,884 | 0.5% |
| NH New Hampshire | 880 | 583 | 1,056 | 634 | 1,554 | 273 | 4,980 | 4,949 | 4,923 | 1.2% |
| NJ New Jersey | 2,583 | 2,281 | 3,406 | 2,180 | 3,888 | 1,221 | 15,559 | 15,802 | 15,737 | -1.1% |
| NM New Mexico | 818 | 698 | 1,005 | 535 | 2,208 | 151 | 5,415 | 5,429 | 5,257 | 3.0% |
| NV Nevada | 680 | 594 | 1,067 | 529 | 1,744 | 184 | 4,798 | 4,742 | 4,530 | 5.9% |
| NY New York | 4,618 | 4,101 | 6,795 | 4,214 | 9,514 | 2,780 | 32,022 | 32,478 | 32,713 | -2.1% |
| OH Ohio | 4,319 | 3,548 | 6,234 | 4,302 | 9,937 | 1,803 | 30,143 | 30,349 | 30,115 | 0.1% |
| OK Oklahoma | 1,301 | 1,100 | 1,605 | 1,062 | 3,741 | 388 | 9,197 | 9,232 | 8,980 | 2.4% |
| OR Oregon | 1,802 | 1,649 | 2,999 | 1,580 | 4,523 | 674 | 13,227 | 13,176 | 12,899 | 2.5% |
| PA Pennsylvania | 3,979 | 3,349 | 5,461 | 3,195 | 6,742 | 1,539 | 24,265 | 24,392 | 24,123 | 0.6% |
| PR Puerto Rico | 367 | 484 | 841 | 1,483 | 1,331 | 1,619 | 6,125 | 6,380 | 6,797 | -9.9% |
| RI Rhode Island | 394 | 264 | 547 | 372 | 563 | 181 | 2,321 | 2,343 | 2,362 | -1.7% |
| SC South Carolina | 1,093 | 877 | 1,581 | 804 | 2,249 | 306 | 6,910 | 6,878 | 6,731 | 2.7% |
| SD South Dakota | 258 | 239 | 374 | 154 | 450 | 101 | 1,576 | 1,585 | 1,569 | 0.4% |
| TN Tennessee | 2,146 | 1,827 | 2,782 | 1,784 | 4,852 | 605 | 13,996 | 14,037 | 13,807 | 1.4% |
| TX Texas | 6,617 | 5,808 | 8,346 | 4,871 | 14,616 | 1,738 | 41,996 | 41,968 | 41,072 | 2.3% |
| UT Utah | 800 | 624 | 1,043 | 1,072 | 5,041 | 256 | 8,836 | 8,745 | 8,482 | 4.2% |
| VA Virginia | 2,888 | 2,329 | 3,458 | 2,051 | 5,307 | 900 | 16,933 | 17,012 | 16,795 | 0.8% |
| VI Virgin Islands | 48 | 28 | 84 | 29 | 87 | 19 | 295 | 309 | 289 | 2.1% |
| VT Vermont | 358 | 241 | 451 | 265 | 820 | 96 | 2,231 | 2,234 | 2,228 | 0.1% |
| WA Washington | 3,280 | 2,887 | 4,903 | 3,140 | 8,977 | 1,171 | 24,358 | 24,241 | 23,885 | 2.0% |
| WI Wisconsin | 1,599 | 1,401 | 2,337 | 1,154 | 3,653 | 529 | 10,673 | 10,639 | 10,481 | 1.8% |
| WV West Virginia | 805 | 585 | 1,096 | 736 | 2,935 | 294 | 6,451 | 6,492 | 6,399 | 0.8% |
| WY Wyoming | 241 | 197 | 322 | 187 | 601 | 73 | 1,621 | 1,618 | 1,569 | 3.3% |
| Other * | 252 | 116 | 210 | 185 | 803 | 60 | 1,626 | 1,665 | 1,558 | 4.4% |
| Total: March 2002 | 97,812 | 86,372 | 138,374 | 84,880 | 232,974 | 39,930 | 680,342 | | | 0.4% |
| Total: March 2001 | 94,923 | 88,192 | 136,291 | 96,219 | 224,978 | 43,961 | | 684,564 | | |
| Total: March 2000 | 75,985 | 103,048 | 109,787 | 133,688 | 204,646 | 50,630 | | | 677,784 | |

(* Other = APO Addresses, Guam, N. Mariana Islands, American Samoa.)

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PRODUCTS AND OBJECTS TO GAIN INTELLIGENCE

The two-year-old Auto-ID Center at *MIT (Massachusetts Institute of Technology)* is working on a global system of tracking goods using low-cost radio-frequency identification tags linked to an Internet-like infrastructure.

The automatic ID project has \$9 million in research funding from a consortium of big companies and government agencies including Pepsi, Johnson & Johnson, the U.S. Dept. of Defense, Procter & Gamble, Wal-Mart, International Paper, UPS, Kraft Foods, The Gillette Company ...and dozens of others. Motorola and Intel are involved from a hardware standpoint. The objective of the system is to link products, businesses, and consumers into a massive interactive real time network. The project's director is a Proctor & Gamble executive who has been reassigned to MIT.

Toward that end, the Auto-ID Center is developing "smart tag" technology for embedding intelligence, identity, and Internet connectivity into everyday objects that will revolutionize how we make, buy, and use products. The technology is based on RFID tags which can be read from 5 feet away. Each chip has its own tiny antenna and broadcasts on an unlicensed frequency.

MIT envisions that within a decade, UPC is will give way to the ePC, Electronic Product Code. UPC (Universal Product Codes) are those bar codes currently printed on consumer products. EPC's are a 96-bit code of numbers embedded into a "smart" chip and attached to various products and objects. Auto-ID technology has the capability to identify more than 268 million manufacturers, each with more than one million individual products.

It is predicted that within ten years nearly every consumer item will sport a tiny microchip that continually broadcasts its existence to radio-frequency readers at loading docks, store shelves, entrances, security stations and parking lots – just about everywhere.

Radio chips are not new. They are widely used to tag livestock, keep track of rail cars, in toll-tag machines on highways ..even to purchase gas at ExxonMobil's SpeedPass wireless gas pumps.

What is new is RFID tag expansion to groceries, consumer products, all sorts of objects ...and connectivity to the Internet. A microchip company in Morgan Hill, California (Alien Technology) is developing the chips for MIT. Their flat chips, about the size of a grain of sand, are expected to cost about a nickel once in wide distribution.

Each smart tag is scanned by a wireless radio frequency "reader," which transmits the product's embedded identity code to the Internet. That is where the "real" information on the product is stored. Sun Microsystems is working on the software and servers needed to assemble the chip data into useful databases. That information is then instantaneously communicated back from cyber-

space to provide whatever information is needed about that product.

Shoppers will be able to point their scanner-equipped cell phones or PDA's (personal digital assistants) at a product and display features on their screens from the manufacturer's web site while they're in the store.

Wal-Mart is already testing the system in a Tulsa store. The arrival of the ePC will be greatly hastened if the world's largest retailer commits to the technology.

Alien Technology even has developed an inexpensive grocery store shelf RFID tag whereby the shelf price label can be kept up to date electronically.

Theft will be drastically reduced because items will report when they are stolen, their smart tags also serving as a homing device toward their exact location. Benefits to consumers will be equally dramatic.

For example, you may never have to read micro-wave cooking instructions again. The appliance will read the ID tag and set the cooking parameters for you. And the clothes itself will be able to program washing instructions into your washing machine.

At least one luxury designer (Prada of Italy) is already attaching Texas Instruments chips to fashion items in its New York boutique. Clothes brought into dressing rooms by customers activate a video screen showing models wearing the same items and suggest related accessories. RFID tags are even expected to be implanted into your pet so lost dogs can be immediately identified.

Shopping will no longer involve long, tedious lines at the checkout counter because items are automatically scanned and billed to your pre-selected personal account as you leave the store.

Smart shelves with wireless sensors will tell manufacturers and store employees when a product needs replenishment. It is the ultimate in inventory management ...no hand-counting necessary – the chips handle everything including reordering the goods. Procter & Gamble's goal is to use information provided by the tags to cut its inventory by 40%.

But not everyone – especially privacy advocates – are excited about automatic data collection and the coming smart tag revolution. While UPC bar codes let companies know what is selling, the new ePC tags will let businesses track products after they have left the store.

They fear that information gleaned from the RFID tags that you may be wearing or carrying will provide a profile that can be specifically linked to a person and used for all sorts of targeted purposes. Your clothes, for example, could indicate your preferences ...even your income level as you walk past a sensor installed in a department store door. The store will know where and when everything was bought and how much was paid.

MIT Auto-ID website is at <www.autoidcenter.org>